

A Prototype of a Descriptive Type System for *Xcerpt*

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Objective

- **Xcerpt** – untyped query and transformation language for XML [Schaffert *et al.*, 2004]
- XML schemata for defining classes of XML documents (DTD, XML Schema, ...)
 - **Types** – sets of data terms / XML documents

Adding (descriptive) types to Xcerpt

- types approximate the semantics of Xcerpt programs

main usage: Discovering type errors



Type inference



type of database → *type of program results*

- user specifies type of database (XML documents to be queried)
 - often available as a schema e.g. a DTD

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- Is the result type empty?
 - Is the result type as expected?
 - Are the variables of intended types?
 - Program documentation

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Type checking



*Is a program correct wrt.
given type of database & results?*

- user specifies
 - type of database
 - type of program results
- inferred result type \subseteq specified result type ?
 - yes => program correct
 - no => program possibly incorrect

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The Prototype



- written in Haskell
- integrated with the prototype implementation of Xcerpt
- available online: <http://www.ida.liu.se/~artwi/XcerptT>
- under development
 - currently a substantial fragment of Xcerpt
- type specifications given as Type Definitions or DTD's

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